

SOME SAWFLIES FROM PAKISTAN

(HYMENOPTERA: DIPRIONIDAE, TENTHREDINIDAE)

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ABSTRACT—The four species of *Gilpinia* (Diprionidae) known from Pakistan are keyed. One new species, *G. ghanii*, is described as well as the female of *G. indica* (Cameron). *Ardis asulea*, new species, (Tenthredinidae) is described and *Nematus melanaspis* Hartig is reported from Pakistan.

The following descriptions are based on specimens sent to me by Dr. M. A. Ghani, Commonwealth Institute of Biological Control, Pakistan Station, Rawalpindi, Pakistan.

DIPRIONIDAE

Gilpinia Benson

Gilpinia is the only genus of Diprionidae known from Pakistan. All species of this genus are associated with conifers.

Gilpinia polytoma (Hartig)

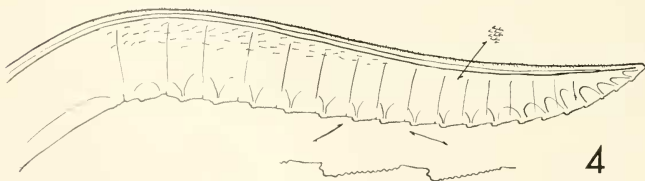
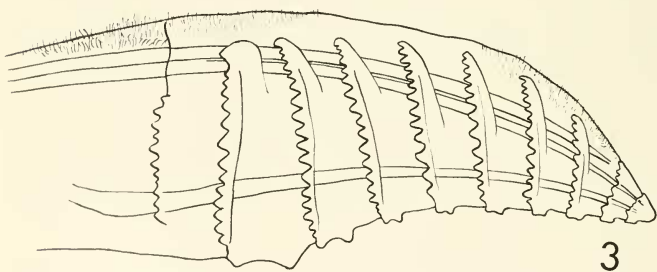
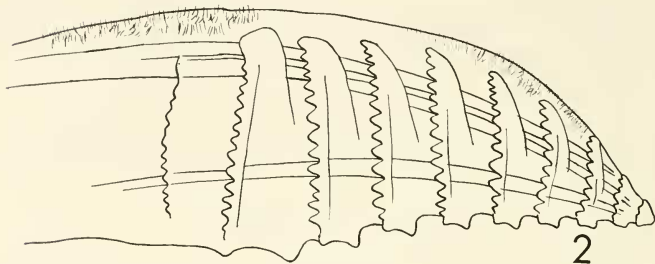
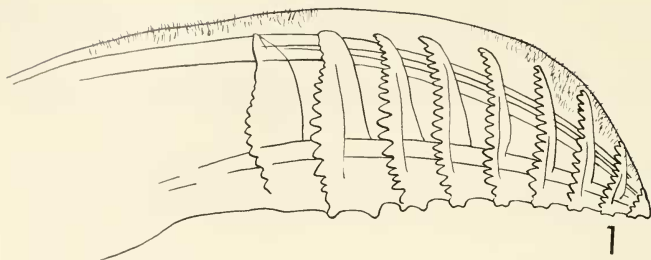
This species was recorded from Pakistan by Benson (1965) and occurs from Europe to Japan. In Pakistan, the larvae feed on *Picea smithiana* Boiss. The scalelike inner hindtibial spur of the female and slender penis valve of the male separate *polytoma* from other *Gilpinia* species in Pakistan. For detailed descriptions see Reeks (1941).

Gilpinia pindrowi Benson

Benson (1961) described this species from Punjab, Murree, Pakistan. The adults were reared from larvae on *Abies pindrow* Spach. I have seen additional specimens from Murree as well as from Gharial, Kaldana, Olore (Swat), and Shogran, but these specimens were reared from larvae feeding on *Picea excelsa* Link.

The female of *pindrowi* is distinguished from that of *polytoma* by the simple hindtibial spurs and from those of *indica* and *ghanii* by the lancet, which has the serrula of annulus 2 on about the same level as the remaining serrulae and has annuli 2 and 3 subparallel (fig. 1). Also, the orange coloration with part of the midtibia, hindtibia, and hindfemur black will separate *pindrowi*. The male penis valve is distinctive in being elongate (fig. 9), not triangularly shaped as in *indica* and *ghanni*.

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***Gilpinia indica* (Cameron)**

This species was known from only the male holotype, but I have associated the sexes on the receipt of reared material from Dr. Ghani. Cameron (1913) described this species from Dehra Dun, India. The specimens I have seen were reared from larvae on *Cedrus deodara* (Roxb.) Loud. from the following localities: PAKISTAN: Dawarian (A. K.), VII-19-69, VI-27-70; Thandiani, VIII-15-70. A description of the female and redescription of the male follow.

Female.—Length, 7.8 mm. Antenna and head black; anterior margin of clypeus, labrum, and maxillary and labial palpi whitish. Thorax black with tegula, prothorax, mesopleuron, and mesoscutellum whitish. Legs whitish to brown; base of each coxa, each femur, and apical third of middle and hindtibiae black. Abdomen mostly whitish with basal plates, lateral margins of tergites, apical segment, and sheath brownish to black. Wings hyaline.

Antenna with 18 segments, rami of central segments longer than their respective segment. Punctuation of head and thorax and dullness of abdomen typical of genus. Hindtibial spurs both simple. Sheath broad, flattened at apex, scopa blunt, not expanded and with broad, elongate scopal pads. Lancet with 10 annuli; annuli 2 and 3 divergent; ventral margin of lancet concave, with serrula of second annulus distinctly lower than serrula of third annulus; distance between central serrulae much longer than breadth of adjacent serrulae (fig. 3).

Male.—Length, 4.5 mm. Black, with labrum, maxillary and labial palpi, extreme apex of each femur, each tibia and tarsus entirely, and apical margin of hypandrium brownish. Penis valve triangularly shaped, short and broad with apex acute and ventral margin slightly concave (fig. 10); harpe and parapenis similar to that of *ghanii* (fig. 7).

Larva.—Preserved specimens are mostly whitish with dorsal, supraspiracular, and subspiracular longitudinal black stripes. Segments of the thoracic legs are black and the head is reddish brown with a large spot on frons, a line extending from occiput to frons, eyespots, clypeus and labrum, and indefinite spots on the sides black.

***Gilpinia ghanii*, n. sp.**

The coloration of this species is similar to that of *pindrowi* except for the larger black spots on the lateral lobes of the mesonotum and the entirely orange legs. The genitalia of both sexes will distinguish this species.

Female.—Length, 8.0 mm. Head black, with mouthparts, clypeus, and supra-clypeal area white to orange and spot behind each eye brownish. Antenna black with first two segments whitish. Thorax white to yellowish with black covering most of each lateral lobe of mesonotum. Legs entirely orange. Abdomen orange,

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FIGS. 1-4. Female lancets: 1, *Gilpinia pindrowi* Benson; 2, *G. ghanii*, n. sp.; 3, *G. indica* (Cam.); 4, *Ardis ascula*, n. sp.

sheath black. Wings very lightly and uniformly infuscated; veins black with costa and ventral half of stigma brownish.

Antenna with 23 segments, rami of central segments slightly longer than their respective segment. Head and thorax heavily punctate, but shining between punctures. Hindtibial spurs both simple. Scopa of sheath broad and flat, not greatly expanded, with oval scopal pads. Lancet with 10 annuli; annuli 2 and 3 divergent; serrulae concave; serrula of second annulus lower than that of third annulus and serrula of third annulus lower than that of fourth annulus, serrulae of annuli beyond third about on same level; distance between serrulae shorter than breadth of adjacent serrulae (fig. 2).

Male.—Length, 6.4 mm. Black; labrum and maxillary and labial palpi whitish; legs yellow to orange with each coxa and outer surface of middle and hindfemora black. Antenna with 22 segments, segments bifurcate as for other species of genus. Penis valve short and broad, triangularly shaped with apex blunt and ventral margin straight and with spines extending along margin (fig. 8); harpe and parapenis as in figure 7.

Larva.—Preserved larval specimens are nearly entirely black with a lateral white stripe and with the inner surfaces of the prolegs whitish; various whitish spots are also on the dorsum and venter of the body and on each subspiracular lobe. Segments of thoracic legs are black. I have seen two specimens, one has a black head with area below antennae whitish, the other has a reddish-brown head, mottled with indefinite areas of black.

Holotype.—Female from Pakistan labeled "Larva feeding on needle of *P. smithiana*, C. I. B. C., SSA-7/69-1, Reshna, 21.VIII.69, 3029." U. S. N. M. type no. 71213.

Allotype.—Male, same data as for holotype, except for number "3030."

Paratypes.—PAKISTAN: data as for holotype (1 ♀); Reshna, 28-7-70, ex smoky black larva on *Picea smithiana*, SSA 6/70-1 (1 ♀); Reshna, 21-7-69, ex larva on *P. smithiana* (3 ♂♂, 1 ♀). In the U. S. National Museum, British Museum, and a male and female returned to Dr. Ghani.

KEY TO *Gilpinia* SPECIES OF PAKISTAN

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|---|-----------------------------|
| 1. Female | 2 |
| Male | 5 |
| 2. Inner hindtibial spur scalelike | G. polytoma (Hartig) |
| Both hindtibial spurs simple | 3 |
| 3. Head, pectus, and mesonotum except for scutellum black | G. indica (Cameron) |
| Clypeus, supraclypeal area, and thorax orange or yellow, mesonotum at most with two black spots | 4 |
| 4. Legs orange with apical half of mid- and hindfemora and mid- and hindtibiae black, hindtarsus mostly black; annuli 2 and 3 of lancet parallel (fig. 1) | G. pindrowi Benson |
| Legs entirely orange; annuli 2 and 3 of lancet divergent (fig. 2) | G. ghanii , n. sp. |

5. Penis valve markedly curved, slender, with not more than 6 small spines (fig. 6) **G. polytoma** (Hartig)
 Penis valve straighter, broader, with 20 or more spines 6
6. Penis valve elongate (fig. 9) **G. pindrowi** Benson
 Penis valve shorter, more triangular in shape 7
7. Apex of penis valve more pointed (fig. 10); each femur mostly black **G. indica** (Cameron)
 Apex of penis valve more rounded (fig. 8); each femur mostly yellowish,
 if black then only on outer surfaces **G. ghanii**, n. sp.

TENTHREDINIDAE
 BLENNOCAMPINAE
Ardis asulca, n. sp.

Only three world species of *Ardis* are known, and all are associated with *Rosa* in which the larvae are shoot borers. This species from Pakistan is atypical in that it lacks a postorbital groove with deep pits, but all other adult characters place it in this genus as do characters of the larvae and habits of the species.

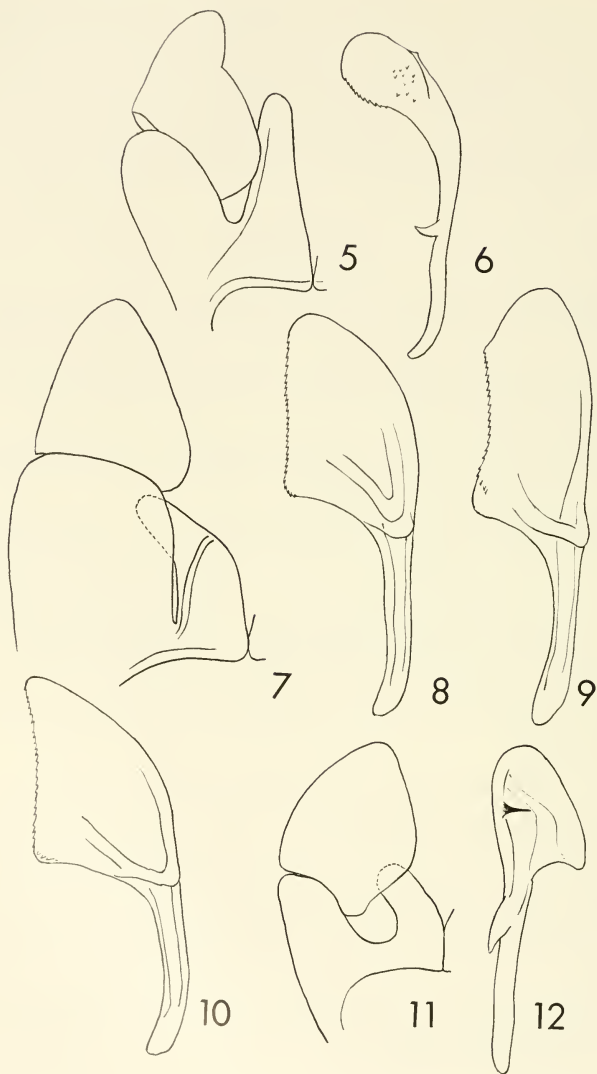
Female.—Length, 7.1 mm. Black, spot on outer surface of apex of front femur, outer surface of each front and middle tibia, and basal third of hindtibia whitish. Wings very lightly, uniformly infuscated.

Antenna slightly longer than head width; third segment longer than fourth segment. Malar space equal to half diameter of front ocellus. Clypeus very shallowly circularly emarginated. Genal carina absent; postorbital groove and pits absent. Prepectus absent. Tarsal claw with inner tooth and basal lobe. Front wing with vein 2A and 3A curved up at apex, but not meeting 1A; cell M present in hindwing. Sheath straight above, rounded below, with slender, cylindrical dorso-apical projection. Lancet with about 20 serrulae; each serrula low and flat, with one prominent anterior subbasal tooth and 10 to 15 fine posterior subbasal teeth (fig. 4).

Male.—Length, 5.1 mm. Color and structure similar to that of female. Harpe oblong; parapenis long, curved laterally (fig. 11); penis valve with short lateral spine (fig. 12).

Larva.—The mature larva is entirely whitish with the tenth tergum and a transverse plate on the ninth tergum black, the spiracles are very lightly winged, and the head is amber with indefinite brown areas on the vertex and between the eyes. The larva is very similar to the *Ardis* larvae described by Smith (1966, 1969), but the absence of a pair of subanal protuberances will distinguish it from *bruniventris* (Hartig) and *sulcata* (Cameron). Also the ninth and tenth terga are amber in those species. The absence of a pair of long subanal spines will separate the larva of *asulca* from that of *Cladardis elongatula* (Khug), also a shoot-borer in roses.

Holotype.—Female, from Pakistan, labeled "Larva boring in twigs of *Rosa* sp., Murree, 18-VI-68, C. I. B. C., T. B. M. 6/68-10, 2889." U. S. N. M. type no. 71214.



Allotype.—Male, same data as for holotype except dated 19-VI-68, and T. B. M. 6/68-12, 3023.

Paratype.—PAKISTAN: Murree, 10-VI-68, C. I. B. C., T. B. M. 6/68-10, 2892, larva boring twigs of *Rosa* sp. (1 ♀). Returned to Dr. Ghani.

NEMATINAE

Nematus (Pteronidea) melanaspis Hartig

Specimens of this species were collected from *Salix* sp. at Murree (7-V-64, 25-V-64, 4-VIII-64), and adults were reared from larvae feeding on the foliage of *Salix wallichiana* Anderss. at Murree (13-VI-70). *N. melanaspis* is found from Europe to Siberia, and this first record from Pakistan considerably extends its southern distribution. The only other *Nematus* species known from Pakistan is *oligospilus* Foerster. The black frons, postocellar area, mesonotum, and dorsum of the abdomen will distinguish *melanaspis* from *oligospilus*, these parts being mostly orange-yellow in the latter. *N. melanaspis* is in the group of *Nematus* species in which the sheath is short and rounded and the lancet is very short and triangular. Benson (1958) illustrated the lancets of *melanaspis* and *oligospilus*.

Nematus (Pteronidea) oligospilus Foerster

Benson (1963) first recorded this Holarctic species from Pakistan. As for *melanaspis*, the larvae feed on *Salix*.

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FIGS. 5–6. *Gilpinia polytoma* (Hartig): 5, harpe and parapenis; 6, penis valve. Figs. 7–8. *G. ghanii*, n. sp.: 7, harpe and parapenis; 8, penis valve. Fig. 9. *G. pindrowi* Benson, penis valve. Fig. 10. *G. indica* (Cam.), penis valve. Figs. 11–12. *Ardis ascula*, n. sp.: 11, harpe and parapenis; 12, penis valve.

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A NEW SPECIES OF LAELAPS FROM THE LEMMING MOUSE,
SYNAPTOMYS COOPERI
(ACARINA: LAELAPIDAE)

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ABSTRACT—*Laelaps stupkai*, n. sp. is described from the southern lemming mouse, *Synaptomys cooperi stonei* Rhoads, collected in the Great Smoky Mountains National Park, North Carolina.

Laelaps Koch is a genus of worldwide distribution, normally parasitizing myomorph rodents which inhabit moist situations. Recent collections of ectoparasites in the course of ecological studies on small mammals in the Great Smoky Mountains National Park have revealed the presence of a new species of *Laelaps*. The host for this mite was a southern lemming mouse, *Synaptomys cooperi stonei* Rhoads, taken near the southern limit of the geographical distribution of this genus. A search of the literature reveals few instances of the parasitism of *Synaptomys* by members of the genus *Laelaps*.

***Laelaps stupkai* Linzey and Crossley, n. sp.**
(Figs. 1 and 2)

Description based upon female; male unknown.

Diagnosis: *Laelaps sensu* Tipton 1960. Distance between first pair of epigynial setae much greater than distance between fourth pair of epigynial setae; length of adanal setae greater than $\frac{1}{3}$ width of anal plate; length of postanal seta less than length of anal plate; first pair of sternal setae not reaching posterior margin of sternal plate; proximal seta of coxa I setiform, distal seta of coxa I spiniform; peritreme extending to middle of coxa I.

Idiosoma: 770 μ long by 590 μ wide.

Dorsum: Dorsal plate elliptical, covering most of dorsum, with about 33 pairs